IN THE CLAIMS:

1. (Previously Presented) A modular programmable controller, comprising:

a plurality of smart modules each comprising its own processing unit;

an internal communications bus connecting the plurality of smart modules with each other;

a communications system configured to exchange information on the internal communications bus using the TCP/IP communications protocol and at least one other non-TCP/IP communications protocol;

wherein each smart module is configured to exchange information using the TCP/IP communications protocol having its own IP address and a TCP/IP stack configured to be executed by the processing unit of the corresponding smart module.

2. (Previously Presented) The communications system according to claim 1, further comprising at least a one network module connected to an external TCP/IP network wherein at least one of the smart modules is configured to exchange information using the TCP/IP communications protocol over the TCP/IP network via the internal communications bus.

3. (Previously Presented) The communications system according to claim 2, wherein the internal communications bus comprises a plurality of separate communications channels for the simultaneous flow of frames in the TCP/IP protocol format together with frames in the format of at least one other non-TCP/IP communications protocol.

4. (Previously Presented) The communications system according to claim 3, further comprising a plurality of network modules connected to a plurality of internet networks, each network module configured to use a different communications channel for the simultaneous flow of frames on the internal communications bus.

5. (Previously Presented) The communications system according to claim 4, wherein the plurality of smart modules is configured to use a plurality of IP addresses to access directly the plurality of internet networks.

6. (Previously Presented) The communications system according to claim 3, further comprising at least one network module connected to the TCP/IP network, the at least one network module comprising:

a driver for accessing the link layer of the TCP/IP network,

a table for storing the IP address of each of the smart modules capable of accessing the TCP/IP network,

means for filtering and redirecting frames from the TCP/IP network according to the IP address of the corresponding smart modules.

7. (Previously Presented) The communications system according to claim 6, wherein the TCP/IP stack is for transmitting and receiving frames formatted for the link layer of the TCP/IP network each smart module has an IP routing table for routing frames transmitted by the smart module to the network module.

8. (Previously Presented) The communications system according to claim 3, further comprising at least one network module connected to TCP/IP network, the at least one network module comprising:

a driver for access to the link layer of the TCP/IP network (9),

two IP attachments comprising a first IP address corresponding to the TCP/IP network and a second IP address corresponding to the internal communications bus,

a TCP/IP stack configured to execute in the at least one network module, for enabling the frames to be routed between both IP attachments.

9. (Currently Amended) The communications system according to claim 1, wherein the link layer of the TCP/IP network (9) is the MAC layer in the Ethernet standard.

10. (Canceled).

11. (Previously Presented) An automatism unit comprising at least one programmable controller for communicating with each other or with components outside the at least one programmable controller a via the communications system according to claim 1.